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PCT 特許協力条約に基づいて公開された国際出願

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(81) 指定国 AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO特許 (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), ユーラシア特許 (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), 欧州特許 (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI特許 (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).

添付公開書類
国際調査報告書

27

(54)Title: PLURIPOTENT CELLS HAVING DISRUPTED INTRINSIC GENES

(54)発明の名称 内因性遺伝子が破壊されている分化多能性保持細胞

(57) Abstract

A process for constructing a chimeric non-human animal characterized by preparing microcells containing one or more foreign chromosomes or fragments thereof, and transferring the one or more foreign chromosomes or fragments thereof into pluripotent cells through fusion with the microcells; chimeric non-human animals which can be constructed by the above process and offspring thereof; tissues and cells originating in the above animals; methods for using the individuals, tissues and cells of the animals; pluripotent cells containing one or more foreign chromosomes or fragments thereof, a process for constructing these cells, and the use of these cells; pluripotent cells in which at least two intrinsic genes have been disrupted; a process for constructing the above cells by homologous recombination; etc.

# INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP98/00860

A. CLASSIFICATION OF SUBJECT MATTER
Int.Cl[6] A01K67/027

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
Int.Cl[6] A01K67/027

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
JICST File on Science and Technology
BIOSIS PREVIEWS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| P, X | Nature Genetics, 16[2] (1997) p.133-143<br>Full text | 1-40, 42, 43, 45-53 |
| P, Y | Full text | 41, 44, 54-76 |
| Y | JP, 05-328878, A (The Institute of Physical and Chemical Research),<br>December 14, 1993 (14. 12. 93),<br>Full text (Family: none) | 1-76 |
| Y | JP, 07-067629, A (K.K. Dinado),<br>March 14, 1995 (14. 03. 95),<br>Full text (Family: none) | 1-76 |
| Y | EMBO Journal, 2 (1983) p.1963-1968<br>Full text | 1-76 |
| Y | Proc. Natl. Acad. Sci. USA, 74 (1997) p.319-323<br>Full text | 1-76 |

[X] Further documents are listed in the continuation of Box C. [ ] See patent family annex.

* Special categories of cited documents:
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"P" document published prior to the international filing date but later than the priority date claimed
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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

| Date of the actual completion of the international search | Date of mailing of the international search report |
|---|---|
| May 21, 1998 (21. 05. 98) | June 2, 1998 (02. 06. 98) |
| Name and mailing address of the ISA/<br>Japanese Patent Office<br><br>Facsimile No. | Authorized officer<br><br>Telephone No. |

Form PCT/ISA/210 (second sheet) (July 1992)

# INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP98/00860

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| | WO, 89/05308, A1 (GESELLSCHAFT FUR BIOTECHNOLOGISCHE FORSCHUNG MBH), June 15, 1989 (15. 06. 89), | |
| Y | Full text | 41, 44, 54, 55 |
| A | Full text & JP, 02-502426, A | 1-40, 42, 43, 45-53, 56-63 |

| 国際調査報告 | 国際出願番号　PCT／JP98／00860 |
|---|---|

A.　発明の属する分野の分類（国際特許分類（IPC））

Int. Cl⁶　A01K67／027

B.　調査を行った分野

調査を行った最小限資料（国際特許分類（IPC））

Int. Cl⁶　A01K67／027

最小限資料以外の資料で調査を行った分野に含まれるもの

国際調査で使用した電子データベース（データベースの名称、調査に使用した用語）

JICST　科学技術文献ファイル
BIOSIS PREVIEWS

C.　関連すると認められる文献

| 引用文献のカテゴリー＊ | 引用文献名　及び一部の箇所が関連するときは、その関連する箇所の表示 | 関連する請求の範囲の番号 |
|---|---|---|
| P, X | Nature Genetics, 16[2](1997) p.133-143<br>全文 | 1-40, 42, 43, 45-53 |
| P, Y | 全文 | 41, 44, 54-76 |
| Y | JP, 05－328878, A（理化学研究所）<br>14. 12月. 1993（14. 12. 93）<br>全文（ファミリーなし） | 1-76 |

☒ C欄の続きにも文献が列挙されている。　☐ パテントファミリーに関する別紙を参照。

＊　引用文献のカテゴリー
「A」特に関連のある文献ではなく、一般的技術水準を示すもの
「E」先行文献ではあるが、国際出願日以後に公表されたもの
「L」優先権主張に疑義を提起する文献又は他の文献の発行日若しくは他の特別な理由を確立するために引用する文献（理由を付す）
「O」口頭による開示、使用、展示等に言及する文献
「P」国際出願日前で、かつ優先権の主張の基礎となる出願の日の後に公表された文献
「T」国際出願日又は優先日後に公表された文献であって出願と矛盾するものではなく、発明の原理又は理論の理解のために引用するもの
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「&」同一パテントファミリー文献

| 国際調査を完了した日 | 国際調査報告の発送日 |
|---|---|
| 21. 05. 98 | 02.06.98 |

| 国際調査機関の名称及びあて先 | 特許庁審査官（権限のある職員） | 2B | 9414 |
|---|---|---|---|
| 日本国特許庁（ISA／JP）<br>郵便番号100－8915<br>東京都千代田区霞が関三丁目4番3号 | 関根　裕　印 | | |
| | 電話番号　03－3581－1101　内線　3238 | | |

様式PCT／ISA／210（第2ページ）（1992年7月）

国際調査報告

国際出願番号　ＰＣＴ／ＪＰ９８／００８６０

Ｃ（続き）．　関連すると認められる文献

| 引用文献のカテゴリー＊ | 引用文献名　及び一部の箇所が関連するときは、その関連する箇所の表示 | 関連する請求の範囲の番号 |
|---|---|---|
| Ｙ | ＪＰ，０７－０６７６２９，Ａ（株式会社ディナード）<br>１４．３月．１９９５（１４．０３．９５）<br>全文（ファミリーなし） | 1-76 |
| Ｙ | EMBO Journal, 2 (1983) p.1963-1968<br>全文 | 1-76 |
| Ｙ | Proc. Natl. Acad. Sci. USA, 74 (1977) p.319-323<br>全文 | 1-76 |
| Ｙ<br>Ａ | ＷＯ，８９／０５３０８，Ａ１<br>(GESELLSCHAFT FUR BIOTECHNOLOGISCHE FORSCHUNG MBH)<br>１５．６月．１９８９（１５．０６．８９）<br>全文<br>全文<br>＆　ＪＰ，０２－５０２４２６，Ａ | 41,44,54,55<br>1-40,42,43,45-53,56-63 |

# Derwent abstract of WO 98/37757

3/9/1
DIALOG(R)File 351:Derwent WPI


012063910 **Image available**
WPI Acc No: 1998-480821/199841
XRAM Acc No: C98-145439
XRPX Acc No: N98-375183
**Pluripotent cells containing foreign chromosomes or fragments - and non-human chimeric animals constructed using them and expressing foreign genes such as human antibiotic genes**
Patent Assignee: KIRIN BEER KK (KIRI )
Inventor: HANAOKA K; ISHIDA I; OSHIMURA M; TOMIZUKA K; YOSHIDA H
Number of Countries: 081 Number of Patents: 004
Patent Family:

| Patent No | Kind | Date | Applicat No | Kind | Date | Week | |
|---|---|---|---|---|---|---|---|
| WO 9837757 | A1 | 19980903 | WO 98JP860 | A | 19980302 | 199841 | B |
| AU 9861189 | A | 19980918 | AU 9861189 | A | 19980302 | 199908 | |
| EP 972445 | A1 | 20000119 | EP 98905731 | A | 19980302 | 200009 | |
| | | | WO 98JP860 | A | 19980302 | | |
| JP 10537525 | X | 20000725 | JP 98537525 | A | 19980302 | 200041 | |
| | | | WO 98JP860 | A | 19980302 | | |

Priority Applications (No Type Date): JP 9762309 A 19970228
Patent Details:

| Patent No | Kind | Lan | Pg | Main IPC | Filing Notes |
|---|---|---|---|---|---|
| WO 9837757 | A1 | J | 217 | A01K-067/027 | |
| | Designated States (National): AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH GM GW HU ID IL IS JP KE KG KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZW | | | | |
| | Designated States (Regional): AT BE CH DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW | | | | |
| AU 9861189 | A | | | A01K-067/027 | Based on patent WO 9837757 |
| EP 972445 | A1 | E | | A01K-067/027 | Based on patent WO 9837757 |
| | Designated States (Regional): AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE | | | | |
| JP 10537525 | X | | | A01K-067/027 | Based on patent WO 9837757 |

Abstract (Basic): WO 9837757 A

Pluripotent cells containing foreign chromosomes or their fragments (preferably at least 670 kb in length, especially more than 1000 kb) are obtained by preparing cancerous cells containing the foreign chromosomes or fragments, then fusing these with pluripotent cells such as embryonic stem cells, embryonic reproductive cells, embryonic cancer cells or their mutants.

Also claimed are: (1) a method of obtaining hybridoma cells by fusing a cell with a high ability to produce hybridoma cells (such as mouse A9 cells) with a cell containing the foreign chromosomes or fragments (such as normal human diploid cells); (2) a method of utilising pluripotent cells to produce chimeric and transgenic non-human animals (especially mammals such as mice) which can express

the foreign chromosomes or fragments introduced; and (3)chimeric animals, their offspring and tissues and cells derived from the offspring produced by a method as in (2).

USE - The inventions can be used for the production of monoclonal antibodies for medical use which are of human type and therefore not antigenic in humans. They can also be used in the production of chimeric and transgenic animals which express useful foreign proteins, or which can serve as models for the study of human diseases.

Dwg.10/45

Title Terms: CELL; CONTAIN; FOREIGN; CHROMOSOME; FRAGMENT; NON; HUMAN; CHIMERIC; ANIMAL; CONSTRUCTION; EXPRESS; FOREIGN; GENE; HUMAN; ANTIBIOTIC ; GENE

Derwent Class: B04; D16; P14

International Patent Class (Main): A01K-067/027

File Segment: CPI; EngPI

Manual Codes (CPI/A-N): B04-F01; B04-G21; D05-H11A1; D05-H15; D05-H16A

Chemical Fragment Codes (M1):

*01* M423 M710 M903 N135 Q233 V600 V645 V753 V754

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